



# Scaling up the Infection and Treatment Method vaccine: Constraints to value chain adoption in Tanzania

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East Coast fever (ECF) is the most important infectious disease facing cattle keepers in Tanzania and the region. Addressing this challenge, in 2003 the Tanzanian authorities adopted the Infection and Treatment Method (ITM) vaccine against ECF. Yet, less than 5% of the country's cattle population has been vaccinated, leaving a huge gap that could be bridged by scaling up ITM delivery. Expansion of ITM delivery has so far been hindered by the limited capacity of existing distribution channels.

Working with the Tanzanian government, the Global Alliance for Livestock Veterinary Medicines (GALVmed) and the existing ITM distributors, the International Livestock Research Institute (ILRI) leads a two-year project, which seeks to increase ITM availability by identifying, training, and linking vaccinators to village-level networks and organizations through appropriate business models. Funded by the United States Agency for International Development, the project, ITM2Scale, seeks to improve livestock productivity, as well as the incomes of women and men farmers, by supporting public and private sector institutions to improve control of ECF.

To achieve the above objectives, a baseline survey of vaccinators was conducted during three workshops held in Mwanza, Arusha and Dar es Salaam in December, 2015. The

workshops targeted vaccinators to understand the major constraints within the value chain. This brief outlines the main findings from the baseline survey.

## Vaccinator characterization

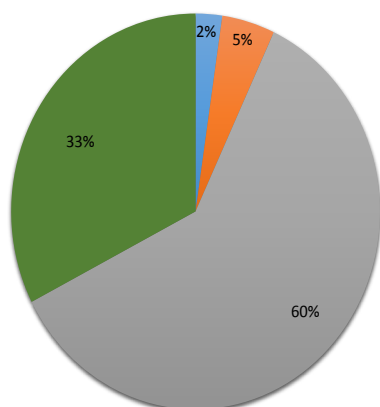
A total of 156 vaccinators were interviewed. Most had certificate-level of education or higher. There was a low level of female representation at all the meetings—accounting for 16.6% of participants in Mwanza, 13% in Arusha and 0% in Dar es Salaam. Approximately half of the vaccinators were trained on ITM between 2010 and 2015, the rest were trained between 1990 and 2009. Irrespective of when they were trained, only 30% of vaccinators were currently active i.e. had vaccinated using ITM in the last 12 months. Another 30% were not vaccinating but willing to contribute to the cost of further training, and about 40% were not interested (i.e. not vaccinating and not willing to contribute to training).

The survey identified the major constraints facing vaccinators as a lack of: awareness among farmers about ITM, training on the use of ITM, capital and availability of the vaccine, as well as the small dose packs.

## ITM trend and distributors in Tanzania

Most participants felt that the number of farmers seeking vaccination services had increased in recent years. Importantly, both the active and non-active participants felt that ITM as a business was profitable. Vaccine distribution was dominated by two distributors which supplied 93% of the vaccine available on the market. The surveyed vaccinators mentioned only two other distributors from which they received vaccine, supplying 7% of available ITM vaccines.

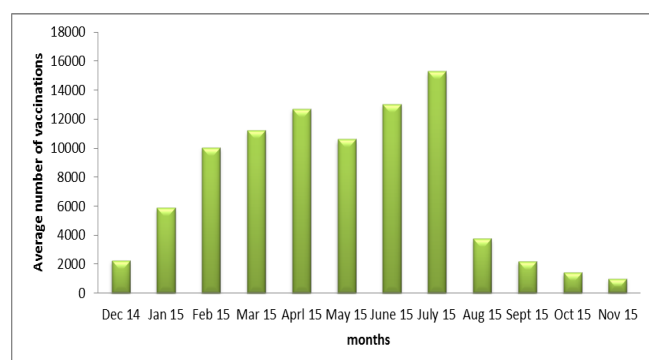
Figure 1. Current market share of ITM vaccine distributors in Tanzania



## Monthly vaccinations

Monthly vaccinations varied considerably across the year increasing from November, peaking during July followed by a steady decline between August and December. This suggests that ITM vaccination ought to be combined with the provision of other animal-health services to be sustainable.

Figure 2. Monthly average vaccinations



## Vaccinator training

A lack of training for vaccinators was identified as one major obstacle to the delivery of ITM in Tanzania. The absence of a national system of accreditation of trainers ensuring the quality of training was also seen as a challenge. The previous training model required the distributors to use their own resources to train their own vaccinators. It also meant that vaccinators were compelled to buy the vaccine from the distributors

who trained them. The vaccinators expressed their dissatisfaction with this model, indicating a preference to be able to purchase vaccines from a distributor of their choice. The survey revealed that 70% of active vaccinators were willing to contribute financially towards further ITM training. Vaccinators believed access to training would lead to:

- A reduction in problems with vaccines, e.g. mode of delivery and vaccine viability;
- An increase in the number of vaccinations;
- Improved results from vaccinations; and
- A reduction in costs.

Interestingly, half of the vaccinators currently not active delivering ITM indicated a willingness to contribute financially towards training. This would go a long way towards ensuring sustainability beyond the project's duration.

## Feedback and monitoring

Vaccinators reported their activities mostly to their local district veterinary officers (77%) and to a lesser extent to distributors and their agents. The reports record different information for different vaccinators; 71% of vaccinators indicated that their reports included the number of animals vaccinated; 51% recorded the number of farmers who availed of vaccinations; 43% recorded the number of doses used; and 49% recorded the ear tag numbers. Most vaccinators send their reports on paper (68%), while others use mobile text and voice messages.

## Business linkages

The vaccinators had established business linkages with three major stakeholder groups: agro-veterinary operators, producer organizations and government agencies. Producer organizations played an important role in raising awareness and assisted in linking the vaccinators to farmers.

Most vaccinators offered other services in addition to ECF vaccination, such as artificial insemination (31%), input supplies (30%) and deworming services (71%). This survey revealed that those vaccinators who did not provide additional services aspired to diversify into the provision of other animal-health services, such as input supplies—reported by 60% of the vaccinators, deworming (44%), extension services (71%) and ECF vaccination (for those who were not currently active).

Linkages with the government agencies were established through the local veterinary offices. These linkages served to create awareness about the vaccine, provide access to farmers and to financial assistance. The most important linkage for vaccinators was with agro-veterinary operators because they played multiple roles, including provision of vaccines creating linkages with farmers and generating wider awareness.

Vaccinators said they hoped to grow their businesses through various methods; 62% expressed their desire to

expand their service provision within the current areas of operation; 42% expressed the willingness to expand into new areas; and 46% would like to venture into other types of animal-health service provision.

## Threat to ITM vaccine

Nearly 90% of vaccinators view fraud as a major concern. Cases of vaccinators over-diluting the vaccine or using unsuitable antibiotics have already been identified. Vaccinators also noted that inadequate cold chain systems had resulted in the vaccine losing its potency. In other instances, the vaccine administration process may not have been followed correctly, increasing the rate of animals which get clinical ECF.

## ITM costs and expenses

The highest costs incurred by the vaccinators included the purchase of the vaccine, transport and consumable materials, such as syringes, etc. Vaccinators cited the high cost of the vaccine as a major impediment to them making a reasonable profit. The high costs also discouraged farmers, thereby limiting the uptake of the vaccine. However, the survey also established that past donor projects, which had previously subsidized the vaccine, could be responsible for the perception of high prices.

Table 1. Monthly vaccinations, vaccine price and vaccine cost components (as a % of the ITM vaccine sale price)

	Average	n
Vaccinations per month	256	27
Sales price of ITM vaccine (per dose in USD)	7.93	27
Purchase price of ITM vaccine	44	26
Cost of consumable materials	13	22
Cost of transport	10	21
Cost of communication	3	25
Cost of labour	7	24
Cost of other items	8	27

Note: Calculated from records of vaccinators who undertook at least 40 vaccinations a month

## Vaccinators' vision

To improve understanding of the vaccinators' aspirations, researchers asked them about their vision for their ITM enterprises. The following were the main responses: 1) to vaccinate more animals; 2) to establish ITM as a business, 3) to reduce the incidence of ECF; 4) to increase awareness of ECF; and 5) to own ITM equipment.

The vaccinators' vision to a large extent aligns with the project's objectives, mainly to increase the distributional reach of the ITM vaccine within Tanzania. The following section outlines project activities aimed at addressing the above challenges and achieving the overall project objective.

## ILRI actions to address these issues

### Development of a training manual

A training manual for ECF vaccinators has been prepared in consultation with stakeholders and led by the Veterinary Council of Tanzania (VCT).

### Business linkages and training

ILRI, in collaboration with the distributors, will conduct a capacity assessment of additional actors who can deliver the ITM vaccine, or support vaccinators, to improve access to ITM by farmers. Upon identification of suitable actors, they will be trained on business skills and ITM. Depending on their roles, they will be linked to distributors to access the vaccine or to vaccinators to integrate ITM provision with other services.

### Awareness creation

To increase awareness of ECF among farmers, ILRI in collaboration with GALVmed and distributors will embark on various public awareness campaigns, including print and other mass media campaigns, e.g. on radio.

### Mapping of Liquid Nitrogen plants

To improve access to liquid nitrogen plants, ILRI is in the process of mapping all the liquid nitrogen plants in Tanzania. Once the mapping is complete, ILRI will facilitate beneficial private-public partnerships where distributors could use the plants and from their revenue maintain the plants in a functional condition.

### Training

The stakeholders agreed on the process for building the capacity of new training institutions. Figure 3 summarizes the conceptual framework guiding the process of accreditation and training of ITM vaccinators. Qualified trainers will be required to write to the VCT, expressing their interest in being approved as trainers.

### Accreditation, Training and Certification for Upscaling ITM Delivery

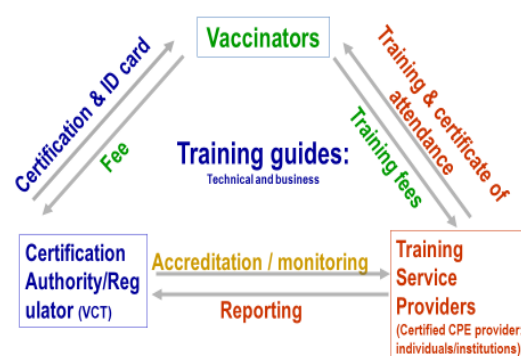


Figure 3. Training process

The VCT will evaluate the institution and if satisfied, approve it to train ITM vaccinators. Currently, VCT has approved four institutions, which are also vaccine distributors. However, stakeholders agree it would be beneficial and efficient to establish a single national training facility to avoid any appearance of conflict of interest when distributors train the vaccinators. Currently, the Livestock Training Agency, established by the Ministry of Agriculture, Livestock and Fisheries is being considered for accreditation for training ITM vaccinators for all distributors in the country.



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